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Citizens' Bulletin

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The Connecticut Department of Environmental Protection

Toward the Year 2000

"...to manage the basic resources of air, land, and water to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations."

Citizens' Bulletin

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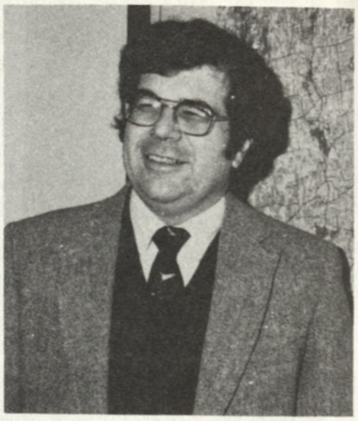
The Wider View

The Future of Connecticut's Environment



By Robert Moore, Chairman, Environment 2000 Committee

The future of Connecticut's environment: This may seem an obvious and basic concern for an agency entrusted with the protection and management of our natural resources. All too often, in a department with so many responsibilities, we are forced to concentrate on the pressures and problems of today. Considering distant tomorrows is a luxury few department managers have time for. During this past year, however, officials of the Department of Environmental Protection have not only looked at the future, but have set forth goals and strategies for the year 2000 and beyond in a new plan. We are now ready to bring this plan to the public for their use in developing complementary goals.

John Fleming, Chairman of Connecticut's Commission on the Future, deserves credit for providing the spark which initiated our futures project. His articulation of the benefits to be derived from it convinced us of its need and value. Commissioner Stanley Pac merits credit for enthusiastically calling for development of a long-range plan, as do Deputy Commissioners John Anderson and Dennis DeCarli for their support in organizing and encouraging staff participation.

The essence of this futures project is the establishment of specific goals for the achievement of a quality environment for the state. The project also defines measureable near-term objectives and alternative management strategies. Long-range plans will be crafted to implement strategies, set schedules, define costs, and achieve the objectives.

At a minimum, I would personally wish to see the project result in a clear definition of the department's mission and goals. This would set a unifed and comprehensive direction for DEP and all succeeding managers. It would also aid in identifying legislative and budget priorities and serve as an environmental rallying point for Connecticut's citizens. At its highest level of success, the futures plan will provide the highest quality of life achieveable for our descendants.

Environment 2000

With a far-reaching plan for the year 2000 and beyond, the DEP is entering an era of renewed purpose as steward of the environment.

by Robert Paier

On April 10, 1984, top-ranking officials of Connecticut's Department of Environmental Protection met at Harkness Memorial State Park in Waterford. The purpose of the meeting was nothing less than the planning of the state's environmental goals and strategies to the year 2000 and beyond.

The meeting was held at the request of Stanley J. Pac, Commissioner of the Department of Environmental Protection, and was organized by Deputy Commissioners John Anderson, Division of Environmental Quality, and Dennis DeCarli, Division of Conservation and Preservation. The keynote speaker at the meeting was John G. Fleming, Chairman of the Commission on Connecticut's Future. Also present were all the unit directors of the DEP. The men and women at this meeting brought with them a wealth of knowledge and experience in working to better the environment.

The meeting lasted two full days -- two days of intense discussion, occasional frustration, and growing excitement. There was a sense, even at that time, said one participant, "of being involved in something deeply important, which could in fact change things."

A special committee, chaired by Robert Moore, Assistant Deputy Commissioner, Division of Environmental Quality, was formed and entrusted with the task of drafting the plan. Other members of the committee include: Hugo Thomas, Director, Natural Resources Center; Carmine DiBattista, Director, Local Assistance and Program Coordination; Glen Gross, Principal Environmental Analyst; Jim Murphy, Principal Environmental Analyst; and Tess Gutowski, Senior Environmental Analyst

The members of the committee all convey renewed optimism and energy. Chairman Robert Moore summed it up: "We are now at the dawn of a new era of the DEP."

In the coming months, the committee will bring this plan to the people of Connecticut. The people will make the final decisions, determine whether the goals and objectives are workable, and will be asked to set standards for future generations. It is possible that with this far-reaching plan we have reached a turning point in our state. It may be that few such opportunities will occur again.

The State-wide Plan: A Brief History

In the past two decades, a number of long-range environmental plans have been put forward. In view of present experience and knowledge, these plans seem limited and unsophisticated. None was brought to implementation. On the other hand, they represented invaluable steps, without which we could not have reached our present level of understanding.

Stanley J. Pac, Commissioner, Department of Environmental Protection

The first of Connecticut's environmental studies was done in the '60s, at the direction of Governor John Dempsey. Such areas as transportation, urban development, natural resources, and economy were researched, and a four-volume report was collated by the Office of Policy and Management. Regional planning agencies were established, and attempts were made to involve local communities. While the data continued to have relevance, the plan was not realized.

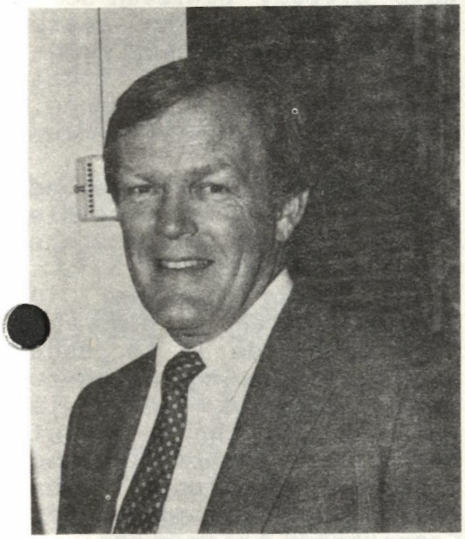
Again at the request of Governor Dempsey, a special "blue ribbon" panel was authorized to look at Connecticut's future. The resulting publication in 1970 of "An Environmental Policy for Connecticut" set forth new ideas of environmental interrelationship and on the urgency of current conditions. While it lacked a clear definition of purpose, ultimately it led to the establishment of the state Department of Environmental Protection.

A Responsibility to Future Generations

The DEP was established by PA 872 of the Connecticut General Assembly in 1971. With that Act, for the first time Connecticut had an official policy statement of man as a trustee of the environment, rather than simply a user. This was a great step forward in public consciousness and, according to Jim Murphy, "This statute should be carved in granite for all to see." The basis of the new department was the understanding that while natural resources were to be used for recreation and harvest by the present generation, it was also necessary to assume the responsibility of passing them on to future generations.

Included within the DEP's legislative mandate was a requirement for a statement of long-range goals to guide future decision-making.

One of the first steps toward this was the proposed "Plan of Conservation and Development for Connecticut -- Policies for Land and Water Resources," published in 1973. It was prepared by the Office of State Planning in coordination with the DEP, the Departments of Health and Transportation, and regional planning agencies. It was at this time that a "big picture" began to emerge in regard to the coordination of state agencies, local communities, and long-range planning for the state.



John Anderson
Deputy Commissioner,
Division of Environmental Quality

In 1976, Joseph Hickey, a planning analyst at the Office of State Parks and Recreation, submitted "A State Environmental Plan." This was a very thoughtful, wide-ranging effort, which considered the overall direction of the DEP and summarized the functions of individual units. Written by someone within the DEP, who had experienced the complex day-by-day problems of management, but with a wider historical perspective as well, this was a significant document. The timing, however, was not right, and Hickey's plan was not acted upon.

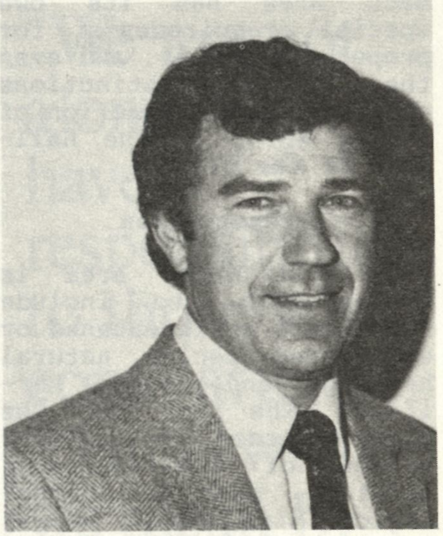
In 1982, and in accordance with statutory mandate, a revision of the "Conservation and Policies Plan" of 1973 was published by the Office of Policy and Management. Described as a "statement of growth, land use, resource management, and public investment for the state," this plan delineated geographic areas of the state in terms of land management.

The Ethical Direction

A short but very significant document, in which all previous long-range plans were mentioned, and yet which made its own unique contribution, was "Environmental Quality, 2000 AD--a continuum of stewardship," by Jim Murphy, now a member of the Environment 2000 committee. Murphy's paper clearly describes how air, water, and land are essential to the quality of life enjoyed by Connecticut citizens and argues for a philosophy of active, ongoing responsibility. Implicit in this document is the concept of stewardship, that we do not own the air, the land, or the water. The focus of this responsibility is that we must guarantee the continued availability of these resources for use by succeeding generations. In this document, which is a direct forerunner to the present plan, the ethical direction is clear.

A distinction should be made, according to Murphy, between the cultural and natural environments, between what was created by man, and what was not. Our heritage is both cultural and natural, and the preservation of both must be approached judiciously and with foresight.

The evolution of our relationship to the environment has been taking place for the last two decades. During that time, says Carmine DiBattista, "the DEP has accomplished extraordinary things." Now, however, it is necessary that another step be taken. That step is toward the year 2000, toward the formulation of an integrated approach to Connecticut's environmental needs, and toward a new era.



Dennis DeCarli,
Deputy Commissioner,
Division of Conservation and Preservation

The Plan as It Now Stands

The DEP's Environment 2000 plan, according to Carmine DiBattista, has been through many "painful" rewrites, but remains in a preliminary stage. Even now, awaiting approval from both the public and from decision-makers, the plan is a major document. There is already evidence of coordination between many hitherto separate disciplines and departments. And, even beyond that, the plan seems to carry with it its own energy. As the direction becomes clearer, the momentum seems to be building.

As it now stands, the plan describes four distinct areas of concern to environmental planners. Each area has its own special requirements for proper management, and even these broad distinctions establish a coordination of energy which is the hallmark of the plan.

Preservation

The first major area is Preservation, to include such areas as threatened or endangered species, natural heritage, and cultural heritage. The fact that the plan includes the preservation of our cultural heritage, such as archeological digs, famous homes, etc., is indicative of its wide-ranging nature. In Preservation, there is a recognition that our heritage, both natural and cultural, is finite and unique and deserving of respect on its own merits. The basic management task here is to keep things the way they are.

Pollution Control

The second area of concern is Pollution Control, to include air pollution, acid precipitation, pesticides, hazardous waste, radioactive waste, water pollution, noise pollution, and others. Items in this area require the active control of people and activities in order to achieve the desired goals. Enforcement to some degree is neccesary here.

Resource Management

The third area is called Resource Management. This area includes land, mining, forestry, wildlife, fisheries, tidal wetlands, as well as dam safety. In Resource Management, the goals are both for the use and conservation of resources. In some cases, this distinction is not absolutely clear-cut, such as at Hammonasset Beach State Park, where some areas are for use as recreational facilities and some areas are strictly enforced for preservation as natural preserves.

> "What we are doing now will be our legacy for future generations."
>
> Robert Moore

Services

The fourth and final area is Services, in which the state provides services directly to the private sector. Items in this area include emergency response preparedness, forest fir prevention and control, recreation, law enforcement, and information and education.

Each of the units within the four areas is further broken down into: (1) long-range goal; (2) management problems, to include present status and perceived trends; (3) management objective; and (4) specific management strategies.

"We should also be aware," says Glen Gross, "that it's possible that we have already achieved some of the goals. Our state has made significant progress in regard to tidal wetlands, for example. That goal has now been accomplished."

With a clearly delineated plan, it will be possible to make such assessments quickly and correctly.

The major problem in setting forth a plan o this magnitude is to reach a consensus. According to John Anderson, this is quite simply the result of different groups having different interests. The Environment 2000 plan for Connecticut is an appeal to those with apparently divergent interests to find out where they agree.

Stewardship: a Continuing Responsibility

While Environment 2000 is a jump to a different level of thinking, it is not a departure from the original purposes of the DEP. The seeds were there all the time, waiting for the right time to come to fruition. "It is as if," says Jim Murphy, "the writers of the original statutes had this in mind all the time."

Stewardship is a key concept in the plan. Th very simple idea here is that our actions must be determined by what is right, rather than what is expedient. In some ways this is very easy and obvious, and in other ways it is revolutionary. The conclusion is that public policy must be one of unselfishness if we are to achieve our goals.

"We must think now in wider terms," says Murphy. "We must understand that we are not alone and that we have an ongoing responsibility to those who come after us. That is what we mean by stewardship."

> There is a mood of deep commitment, optimism, and a sense of taking part in something important.

The Values and Benefits of the Plan

The values to be derived from having specific goals and strategies for the DEP will be immediate and far-reaching. The plan will allow for a more efficient and effective departmental operation, in that all activities will be coordinated with the totality of the state effort. Decisions on policy, management, and budget will be vastly simplified.

Also, according to Glen Gross, the plan will provide a rallying point for the environmental constituency.

Finally, the plan will provide a platform for legislative action and executive agencies, including the governor's office. The stage will be set for meaningful, consistent, and long-range enviromental legislation.

Bringing the Plan to the Public

After this plan has been subjected to thorough review within the DEP, it will be brought before the public through special newspaper supplements. Workshops and public hearings will be held throughout the state, at which time public input will be actively sought.

"Connecticut Yankees are prudent," says Glen Gross. "They want to know what they're buying. This plan will show them just what they are being offered."

Adoption of the plan is expected to take place in 1986, after which it will go into implementation stages. It is then that results will be realized in terms of the DEP strategies, budget, and coordination with other state agencies, municipalities, private conservation groups, and the legislature.

Moving Into A New Era

It has been more than one year since the Harkness meeting. In that time, knowledgeable, experienced, and dedicated public servants have been working to hammer out the beginning of a plan which will direct the mission of the DEP for many years to come. There is a mood of deep commitment, optimism, and a sense of taking part in something of meaning.

"What we are doing now will be our legacy for future generations," says Robert Moore.

> "We are not alone. We have a responsibility to those who come after us. That is what we mean by stewardship."
>
> Jim Murphy

We are moving into a new era. We are moving into a complex and uncertain future faster, perhaps, than we want to. And we are concerned about what kind of a world will be here for our children and grandchildren. With the Department of Environmental Protection's plan for the year 2000 and beyond, it is hoped that we can meet that future with optimism, purpose, and responsibility. ■

Nature Notes

Natural Plant Dyes

Alchemy from Colonial Days

Text and Illustrations by Penni Sharp

Stinging nettle (Urtica dioica)

This past summer, I visited several Colonial restoration villages, and glimpsed first-hand life as it was in the early days of America. Once again, I was impressed by the ingenuity and resourcefulness of our forefathers. The world of the early settlers was a dark wilderness to be tamed and conquered, to be approached with respect and awe. For food, shelter, warmth, clothing, Colonial Americans looked to the natural world. Although I am sure most of us would not wish to exchange the creature comforts of the 20th century for the hard life of the pioneer, there is a charm to a life spent in such close contact with nature. These early people possessed an intimate knowledge of plants and animals and that, at least, if we put forward a little effort, is still available to us today.

We have all seen antique quilts, hand-hooked rugs, or hand-loomed blankets and shawls, and marveled at their subtle yet lovely colors. How were these beautiful colors created? Most likely, the quiltmakers, experimenting with different plants, made their own dyes. The use of plants and other natural materials for coloring fabrics goes far back in human history, and was already a sophisticated process during the time of early Greece and Rome. Today synthetics have, for all practical purposes, replaced natural dyes,

Common St. John's-wort (Hypericum perforatum) although plant materials are still used for certain specialized items.

The Mordanting Process

A number of years ago, I thought it would be interesting to try some dye recipes. The procedure, while not particularly complicated, is time-consuming. It is necessary to assure that the dye will set and not run from the fabric at first washing. Thus, dyeing generally involves two steps: mordanting and dyeing.

Mordanting is the term used for any treatment that will fix the color. Although there are a few plant dyes that will be permanent without this process, most require a mordant. Several different substances have been used as mordants. Metallic salts, such as alum, tin, chrome, and iron have all been used, as well as acetic acid, ammonia, lime, tartaric acid and tannic acid. One plant may produce different hues depending upon which mordanting process is used. For example, privet will dye yellow if alum is used as the mordant, but will produce a gold color with a chrome mordant.

The general procedure for mordanting wool is to dissolve the mordant in water, immerse the clean, washed wool in the mordant bath, and simmer for about an hour. Once the fabric is mordanted, it is ready for the dye bath.

The Dyeing Process

The list of plants used for dyeing is lengthy. The dye may be derived from the whole plant, from the flowers, or from nuts or berries. Many dye plants have a history of medicinal uses. This is true of the stinging nettle (*Urtica disica*), an alien member of the Connecticut flora. Why anyone would consider using this plant as a remedy remains a mystery to me. It is armed with stinging hairs, and a close encounter with nettle is usually a painful one. Nonetheless, it has been used in the treatment of gout, asthma, and tuberculosis. Its juices have been applied externally to heal burns and to relieve the pain of its own stings.

Rough-stemmed goldenrod

(*Solidago rugosa*)

Stinging nettle has rather non-descript, greenish flowers borne on small clusters which grow from the leaf axils. Both stem and leaves are densely covered with bristly stinging hairs. The leaves are opposite, on long stalks, and coarsely-toothed. Stinging nettle is a plant of waste places and thickets.

The entire plant, except the roots, is used in the preparation of dye. It is chopped and boiled for an hour to make the dye bath. Mordanted, wetted wool can be placed in a lukewarm dye bath which should then be brought to the boil and simmered for 30 minutes. It produces a green color. During World War II, native stands of this plant were widely sought in Great Britain, as it was a key ingredient in the production of camouflage clothing. One should wear gloves and use extreme caution when handling this plant.

Another alien species which has a medicinal history and also makes a satisfactory dye plant is the common St. John's-wort (*Hypericum perforatum*). It grows as a weed along roadsides, in fields, and waste places. The flowers of common St. John's-wort are a golden-yellow. Each star-shaped flower is about an inch wide and has five petals which often have minute black dots along the margin. It has numerous opposite leaves arranged along a sturdy stem. Part of its common name "wort" derives from the Anglo-Saxon term meaning "medicinal herb." The plant was traditionally used to treat madness. It was also applied to wounds to relieve pain.

As might be expected, the plant produes an attractive yellow dye. The mordant used is alum. To prepare the dye bath, plant tops should be soaked overnight in water. The next morning, bring to a boil and simmer for an hour. The liquid can then be strained, cooled, and readied to receive the yarn.

Dyeing with Goldenrods

Both stinging nettle and common St. John's-wort are plants that may be unfamiliar or may not be found in enough quantity to be harvested for dye material. Fortunately, there are other easily-recognized plants that will produce pleasing colors when used for dyes. Among these are the goldenrods (Solidago spp.).

The month of September belongs to the goldenrods. Roadsides and fields are tinged yellow with their bloom. The aromatic yellow flowerheads are a favorite of butterflies and bees. Goldenrods are members of the composite family; each flowerhead is a cluster of small flowers, both rays and disks, growing together.

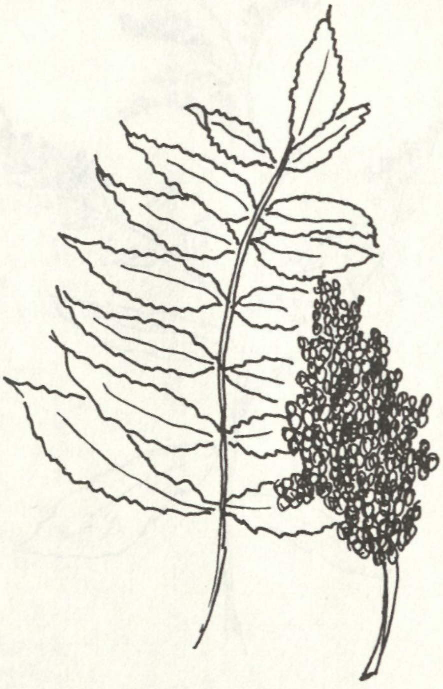
In addition to its use as a dye plant, infusions prepared from leaves and flowers have been used as a diuretic.

Almost 30 species of goldenrods can be found in Connecticut in a wide range of habitats. For dyeing purposes, almost any species will do. Results are best, however, if plants are picked when coming into bloom. A yellowish-tan color is produced if alum is used as the mordanting agent; a deep gold is achieved with a chrome mordant. Flowerheads, once gathered, should be placed in a large kettle with water, brought to a boil, and simmered for at least an hour.

Dyeing with Sumacs

Other plants that are very colorful in the fall are the several species of non-poisonous sumacs (Rhus spp.). Readers should be reminded that poison sumac (Toxicodendron vernix), a plant of deep swamps, is in fact highly poisonous, and **should not be handled or used.**

Smooth sumac



(Rhus glabra)

Staghorn sumac (Rhus radicans) and smooth sumac (R. glabra) are upland plants common along Connecticut roadsides, fields, and waste places. The leaves change color in late summer and the bright orange-red provides a nice contrast to the dark-red berries. These sumacs are versatile dye plants, and leaves, twigs, and berries can all be used for dyeing. The fuzzy red berries should be harvested when ripe, crushed, soaked overnight, then boiled for about half an hour. If an alum mordant is used on wool, the dye will produce a tannish-yellow. If iron slats are used, the dye will be gray.

A rich brown color is produced by the leaves and young shoots of sumac. These plant parts are high in tannin, and because tannic acid is itself a mordant, no previous treatment is required. The leaves and shoots should be the new growth of the year and should be collected in late summer. They must first be dried, after which they can be crumbled, soaked in water overnight, and then boiled for an hour.

Other plant material that have traditionally been used to produce dyes include: oak bark, black walnuts, lichen, butternuts, the leaves of lily-of-the-valley, osage-orange, young shoots of bracken fern, the roots of ladies' bedstraw, and many more.

Dyeing your own wool can be a very satisfying project, provided you plan for the time and take care to follow instructions. There are a number of books available that provide detailed instructions.

Only plants that grow in great abundance should be harvested for the dye part.

Once you have explored the possiblities of dyeing with plants, you may find that you are looking at wildflowers, the trees, and the colors of nature in a new and different way.

Reference: Dye Plants and Dyeing -- a handbook, Brooklyn Botanic Garden.

Governor Appoints New Members to Council on Environmental Quality

With a host of new members, a downpour of environmental assessments to review, and numerous citizen complaints in need of solutions, the Council on Environmental Quality is very busy these days. Despite the chairman's best efforts, Council meetings keep running overtime. CEQ meetings are open to the public; they are held at 10:00 a.m. in the State Office Building in Hartford on the third Wednesday of every month.

New Appointments

Gregory A. Sharp, of North Branford, was appointed Chairman of the CEQ by Governor William A. O'Neill. A partner in the Hartford law firm of Lewis, Sharp, and Lewis, and having served several years in the Department of Environmental Protection, Sharp is no stranger to state environmental affairs. As a member of the boards of directors of the Connecticut Audubon Society and the Connecticut Fund for the Environment, his expertise is tapped frequently for state task forces and advisory boards, such as the Governor's Pesticides Task Force on which he currently serves.

The governor also appointed Peter Stern, of Glastonbury, Barbara Uchino, of Woodbridge, and Mary Walton, of Jewett City. Ms. Walton had previously served on the Council for three years. All have been involved actively with state environmental organizations. The fifth gubernatorial appointee is Grace Lichtenstein, a resident of Rowayton and a seven-year veteran of the Council.

Also serving on the CEQ, having been appointed by State Representative R.E. Van Norstrand, Speaker of the House, are: Astrid Hanzalek, of Suffield, and Dana Waring, of Glastonbury, both of whom are known for their involvement with conservation organizations.

Reviewing DEP Activities

The Council members, together with staff, are now preparing the CEQ's annual report to the governor. The Council will take a critical look at some DEP programs, and will determine where further staffing or funding may be required, or where perceived trends may warrant changes in DEP activity.

Taking a critical look at DEP programs is one of the reasons for CEQ's existence. The CEQ also reviews Environmental Impact Evaluations prepared by other state agencies, and receives and investigates citizen complaints.

Recent months have brought a boom in state construction projects and, consequently, in Environmental Impact Evaluations (EIEs). "We've seen some environmental assessments in recent months," states CEQ Executive Director Karl Wagener, "that have been excellent. The EIE for the Torrington Industrial Park, for example, included detailed suggestions for major alterations aimed at preserving wetlands, prime farmland, and historical features. The Department of Economic Development, which ordered the EIE, adopted those suggestions. This clearly shows that environmental benefits can be produced when environmental impact evaluation procedures are followed properly."

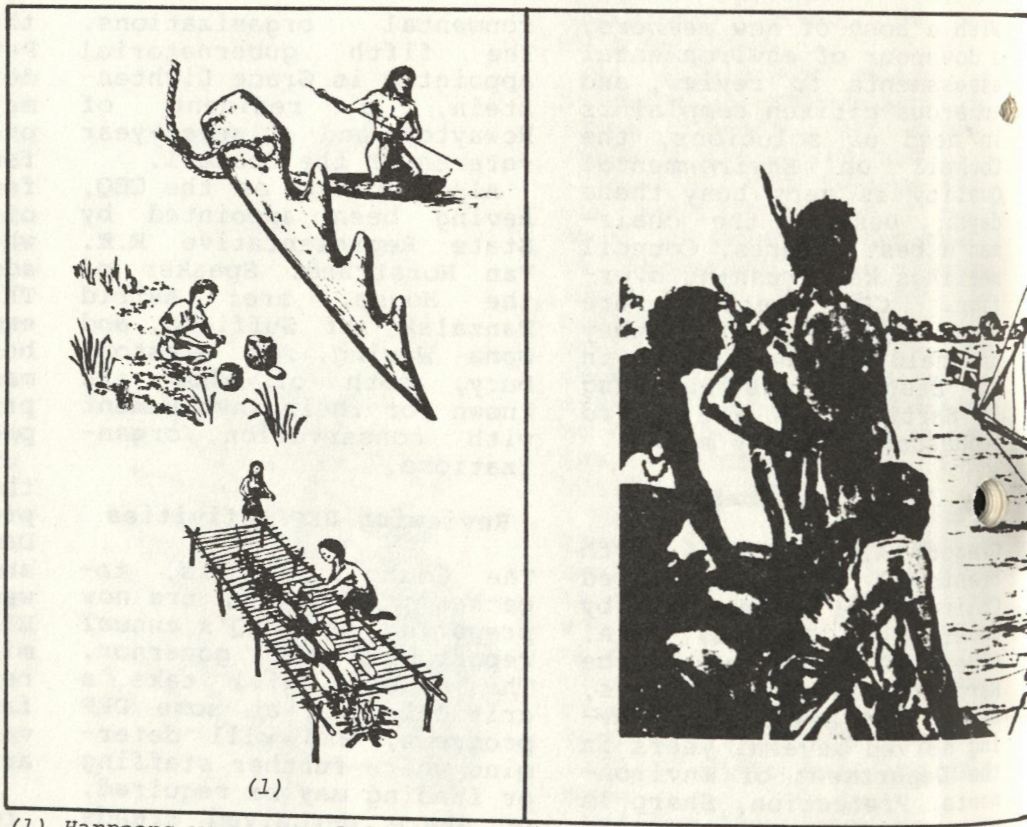
The Council also reviewed the EIE for a hydroelectric project on the Eagleville Dam in Eastern Connecticut, and raised questions that were not addressed in the EIE. Ultimately, DEP Commissioner Stanley Pac rejected that project in favor of the site's preservation as a recreation area.

Citizen Complaints

The CEQ also tries to help citizens with difficult environmental problems, ranging from toxic air pollution to wetland disputes. If you see what you think is a violation of environmental laws, you should report it to the DEP. But, if you are not sure where to find the appropriate department, or if you have a difficult case that seems to fall between the cracks, or even if you don't think the DEP is doing its job properly, it may be a case for the CEQ. Write or call the CEQ at: State Office Bldg., Hartford, CT 06106, 566-3510. ■

Early Days Along

Reprinted from A History of Connecticut's Coast,



(1) Harpoons were carved from bone or antler. Fish was always a food staple
(Travelers Insurance Co.); (3) The Colonists approached nature with inexhaus

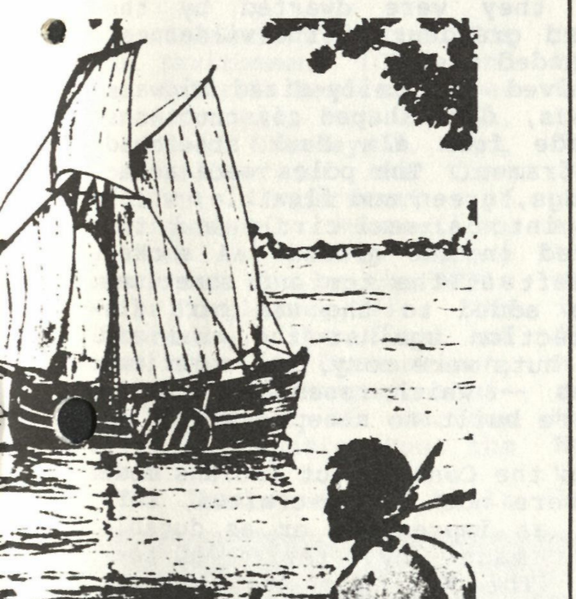
Since we are celebrating Connecticut's 350th birthday, it seems to be a good time to take a look into the past at some of our state's earlier coastal settlers -- the Indians. In the last 350 years, Connecticut has made tremendous economic progress. Today, we are a technological state with many modern factories producing sophisticated goods, and perhaps it is only through an historical perspective that we can understand our present environmental pressures and begin to comprehend the vast changes that our coastline and our culture have undergone.

By the 1600s, when the first Europeans began exploring the New World, they found a string of sites along the coastal region, each with 50 to 150 inhabitants. The Indians lived relatively comfortably -- digging for shellfish, hunting the wild fawn and deer, and never roaming very far.

In all, 16 tribes lived in Connecticut, with the coastal zone controlled by at least eight tribes: the dreaded Pequots (the name means "destroyer of men"), in the Groton-Stonington area; the Mohegans, in Mystic; the Niantics, in Lyme and Waterford; the Hammonassets, in Saybrook and Clinton; the Menunketucks, in Guilford and Madison;

Connecticut's Coast

a publication of DEP's Coastal Management Program



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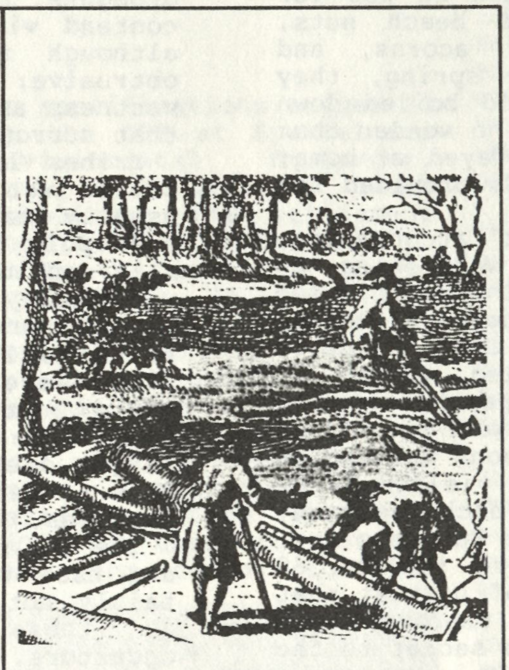


(3)

. (Globe Pequot Press); (2) The Indians were fascinated by the early Colonists.
stible, even obsessive, energy. (Yale University Art Gallery.)

the Quinnipiacs, in the New Haven area; the Paugusetts, in Bridgeport and Stratford; and the Siwanogs, a New York tribe whose territory extended into Greenwich and Stamford.

Although historians still do not agree on the population figures (estimates range from 6,000 to 20,000), it is generally acknowledged that Connecticut contained one of the densest concentrations of Indians in America. Still, there was plenty of room between settlements, particularly in the 1600s, when the Indian population was decimated by plague. These stretches of wilderness were hunting territories which were well-known and well-defined by natural landmarks. There was surprisingly little economic and cultural exchange between the tribes in the coastal regions, although the influence of the Pequots was felt along the coast, and many tribes did pay tribute to this warlike tribe.

The tribes did have one thing in common, however, and that was Long Island Sound. From it, they took oysters, scallops, lobsters, crabs, soft clams, quahogs, mackerel, halibut, cod, flounder (their chief fish food), skate, haddock, scup, striped bass, sturgeon (which they harpooned at night from torch-bearing canoes), salmon, shad, herring, eels, and lamprey. They even hunted whales which now and then appeared offshore. Fishing may have provided an easier and more certain subsistence than hunting, but the coastal tribes were not only fish-eaters.

They hunted deer, moose, bear, raccoon, rabbit, squirrel, pigeon, partridge, quail, turkey, duck, goose, and crane. They were also proficient trappers, and caught wolves, foxes, wildcats, and beavers for their furs. Wild berries and mushrooms could be had for the picking, as well as beech nuts, hickory nuts, chestnuts, acorns, and sunflower seeds. In the spring, they tapped the maple trees and boiled down the sap for sugar. It is no wonder that the Connecticut Indians stayed at home; the Sound and the woodlands provided for all their needs.

The Indians, so adept at hunting, fishing, and trapping, were also an agrarian people who grew Indian or mixed corn, Johnny-cake corn, popcorn, beans, squash, and pumpkins. One of their favorite foods was called yokeag or nohehick -- yellow corn parched in hot ashes and pounded into powder -- and it was said that three teaspoons was enough for a meal. Indian corn yielded 1,200 to 2,000 grain seeds for each one sown, a ratio that astounded the European settler; and one Indian acre yielded 60 bushels of corn, a rate of harvest that Connecticut farms barely improved upon even as late as 1860. The secret to the Indian's success was simple. He, actually she (because the fields, except the tobacco fields, were the province of Indian women), did not exhaust the land. Indians let their fields lie fallow for years because there were enough clearings near their settlements to begin new sites. The European farmer, although he had cleared larger tracts of land and replenished the soil with manure, was not so eager to let meadows go unproductive; he farmed the land as intensively and as exhaustively as he had in the Old World.

The Puritans believed that there were "treasures" in nature, but these had to be "fetched thence by the sweat of our brows." The Indians took advantage of natural abundance as eagerly and thoroughly as the Europeans did, but they did not share the Europeans' penchant for development. Local tribes did clear fields for sowing corn (Pyquag, their name for Wethersfield, means "cleared land" or "open field"), but never to the extent that the Europeans did. They were at home in the forests, while the Puritans, who imagined demons everywhere, systematically purged the landscape of woods. The Indians also exploited the Sound and rivers as avidly as the first settlers did, but the European population soon expanded, and the store of seafood did not, after a while, seem so infinite.

The Connecticut Indians lived a simple, comfortable life. There were, of course, hardships, for even nature at its most generous can be destructive. Winters were less harsh on the coast than in the hinterlands, but they were by no means mild; and there were droughts, floods, storms, and plagues to contend with. The Indian settlements, although relatively large, were not obtrusive; they were dwarfed by the vastness and grandeur of the wilderness that surrounded them.

Tribes lived in family-sized wigwams called wetus, dome-shaped constructions usually made from elm bark stretched over pole frames. The poles were actually saplings, green and flexible, which were bent into a semi-circle and the ends secured in the ground. A smoke-hole was left at the top and sometimes skins were added to the elm bark for extra protection against the wind and cold. The huts were cozy, and sometimes larger ones -- which resembled quonset huts -- were built to sleep eight or 10 families.

The tools the Connecticut Indians made and used were not highly-crafted, certainly not as impressive or as durable as those made by their hunter-ancestors. The hoe, for example, was just a clamshell tied to a stick; their clothing was also simple, as was their chief means of transportation, the canoe. It seems that it made no sense to the Connecticut Indians to do more than was necessary to live in harmony with nature. It is easy to romanticize this kind of thinking, but the Indians who populated the Connecticut coast were simply a people who responded to their environment as best they could. Their way of life died out not because it was right or wrong, but because it was a victim of an accident of history; with the arrival of the Europeans, the Indians' subtle mixture of casualness toward and respect for nature would be subsumed in the dauntless, inexhaustible, often obsessive energy of the Puritans.

Note: To receive a free copy of *A History of Connecticut's Coast*, the DEP Coastal Management Program publication, please call 566-7114, or write to CAM Program, 71 Capitol Avenue, Hartford, CT 06106. ■

Something New on the Road

DEP receives mobile water toxicity lab

The Connecticut Fund for the Environment (CFE) and the Natural Resources Defense Council, Inc. (NRDC), presented Stanley J. Pac, Commissioner of the Connecticut Department of Environmental Protection, with a new mobile laboratory for use by the DEP's Water Compliance Unit. The laboratory, the first of its kind in Connecticut, will be used to test aquatic toxicity at various river sites throughout the state.

The laboratory was built to specifications requested by the DEP at Specialized Environmental Equipment, Inc., of Easley, South Carolina. The settlement fund will also be used to stock the lab with needed equipment. It is hoped that it will enable DEP to more effectively enforce its permit process in the future. When not in use as a field laboratory, the unit will be housed at the Water Compliance Unit's Hartford office where it will be used to conduct long-term chronic toxicity tests and bioaccumulation studies.

DEP Commissioner Stanley J. Pac accepts donation of toxicity lab from Katherine Robinson, Staff Attorney for the Fund for the Environment.

CFE and NRDC are both non-profit membership groups, with over 5,000 members between them in Connecticut. They are dedicated to the wise management of natural resources and the preservation and protection of those resources through sound legal action.

The funds for the mobile lab came from a negotiated settlement of one of the enforcement actions the two environmental groups have brought against Connecticut industries for violations of water pollution permits.

"We felt it appropriate that this settlement fund go toward improving the state's water quality testing and monitoring capabilities," said Katharine Robinson, Staff Attorney for the Fund for the Environment.

Accepting the donation of the Mobile Laboratory, DEP Commissioner Stanley Pac said, "The Mobile Laboratory will provide DEP with greater monitoring flexibility while expanding our capacity to obtain complete and accurate toxicity information on potential sources of pollution. Better data will mean better regulatory decisions and improved water quality for the citizens of Connecticut. We intend to use this unit both as a mobile laboratory for on-site testing of wastewater effluents and as a base from which DEP's field activities can be coordinated during intensive water quality monitoring surveys."

The negotiated settlement was a result of one of approximately 40 enforcement actions brought by CFE and NRDC last year against industries found to be regularly in violation of their permits. There are 19 lawsuits currently awaiting decisions in Hartford's Federal Court. ■

New Legislation

Acts of environmental significance from the 1985 Session of the General Assembly

By Glen Gross, Principal Environmental Analyst
and Tess Gutowski, Sr. Environmental Analyst
Drawings by Felix Mimo

S.A. 85-19: AN ACT REQUIRING THE DEPARTMENT OF PUBLIC UTILITY CONTROL TO STUDY THE NEED TO REGULATE THE RATES OF ALL PRIVATE SEWAGE COMPANIES.

This Special Act requires the DPUC to conduct a study to determine the need to regulate rates of all private sewage companies. Present law covers private sewage companies which discharge treated effluent into a waterway of the state but does not cover private sewage companies which use subsurface disposal methods or which discharge sewage into anothe system which discharge treated effluent into a waterway of the state.

The DPUC must submit its report to the legislative energy and public utilities committee by February 10, 1986. **Effective Date: May 6, 1985.**

S.A. 85-26: AN ACT CONCERNING HYDROELECTRIC DEVELOPMENT ON THE PACHAUG RIVER AND CONTRACTS FOR THE CONSTRUCTION OR REPAIR OF THE ASHLAND DAM ON THE PACHAUG RIVER.

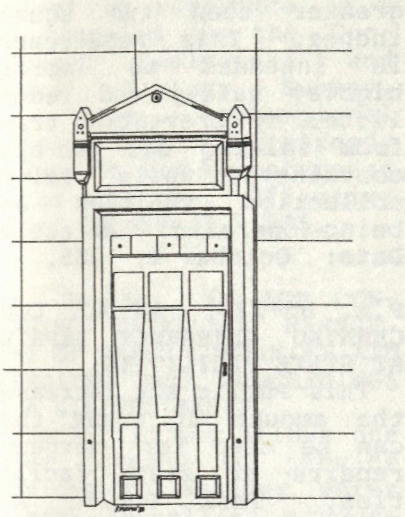
This Special Act enables the commissioner of environmental protection to grant easements or leases for hydroelectric development at the Beachdale, Glasgo, Pachaug, Hopeville, Slater, and Ashland Dams on the Pachaug River. The commissioner will determine the just compensation for any easements or leases. This Special Act also permits the commissioner t make an expenditure of up to one million dollars for the construction or repair of the Ashland Dam on the Pachaug River. **Effective Date: October 1, 1985.**

S.A. Act 85-27: AN ACT CONCERNING AN ACID RAIN STUDY IN THE SALMON RIVER BASIN.

This Special Act requires the commissioner of environmental protection to study acid rain impacts in the Salmon River Basin. The commissioner must submit to the governor, and to the legislative environment committee, interim reports on or before July 1, 1986, July 1, 1987 and a final report on or before July 1, 1988. **Effective Date: October 1, 1985.**

S.A. 85-30: AN ACT MAKING APPROPRIATIONS FOR THE EXPENSES OF THE STATE FOR THE FISCAL YEAR ENDING JUNE 30, 1986.

This Special Act provides the appropriations for the expenses of the state for



the fiscal year ending June 30, 1986. The appropriations for the department of environmental protection total $26,754,199. **Effective Date: July 1, 1985.**

S.A. 85-32: AN ACT CONCERNING A PILOT STUDY OF WATER CONSERVATION AT STATE FACILITIES.

This Special Act requires the commissioner of environmental protection to conduct a pilot study of water conservation at state facilities. The study is to cover the feasibility, costs, and benefits of retro-fitting these facilities with water-conservation devices. The commissioner must submit the report to the legislative environment committee on or before January 15, 1987. **Effective Date: October 1, 1985.**

S.A. 85-39: AN ACT CONCERNING THE EKONK CEMETERY ASSOCIATION.

The Special Act authorizes the commissioner of environmental protection to release to the Ekonk Cemetery Association a certain parcel of land situated in the town of Sterling. **Effective Date: October 1, 1985.**

P.A. 85-67: AN ACT CONCERNING THE HAZARDOUS WASTE MANAGEMENT SERVICE.

This Public Act provides the hazardous waste management service an extension of time to submit its report to the general assembly from January 1, 1984 to July 1, 1985. The report will identify the types and volume of hazardous waste generated in the state and will provide a description of treatment of such wastes.

This Public Act also provides the service an extension of time in submitting its management plan for the disposal of hazardous waste. Prior law required the plan to be submitted to the general assembly by January 1, 1985. This Public Act extends the submittal date to January 1, 1986. The service was also given an extension of time to complete its inventory of preferred areas for hazardous waste management facilities. Prior law required the inventory to be completed by July 1, 1985; the inventory is now due by July 1, 1986.

This Public Act sets forth a deadline of January 1, 1987, which allows the service to acquire by purchase selected sites for hazardous waste management facilities. **Effective Date: April 29, 1985.**

P.A. 85-88: AN ACT CONCERNING A REGISTRATION PROGRAM AND STANDARDS FOR OIL AND GAS EXPLORATION.

This Public Act requires the commissioner of environmental protection to adopt a registration program and standards for oil and gas exploration. The Public Act also prohibits anyone from engaging in exploratory drilling for oil and gas until the regulations required of this act are adopted. **Effective Date: May 1, 1985.**

P.A. 85-91: AN ACT EXTENDING THE DATE MUNICIPALITIES ARE REQUIRED TO ADOPT SOIL EROSION AND SEDIMENT CONTROL REGULATIONS.

This Public Act extends the date municipalities are required to adopt soil erosion and sediment control regulations to June 30, 1986. An extension may be granted to any municipality which makes an application to the Council on Soil and Water Conservation before July 1, 1985. **Effective Date: May 1, 1985.**

P.A. 85-142: AN ACT CONCERNING THE RESPONSIBILITIES OF THE COMMISSIONER OF HEALTH SERVICES IN THE REGULATION OF PUBLIC DRINKING WATER.

This Public Act expands the powers of the commissioner of health services in the regulation of public drinking water. The Public Act authorizes the commissioner of health services, rather than the commissioner of environmental protection, to approve the sale of excess water by a public water system. When the DEP commissioner participates in interstate water negotiations, he is required to consult with the commissioner of health services.

The Public Act also eliminates the requirement that water companies file forecasts of proposed land sales with the commissioner of environmental protection. The commissioner of environmental protection's recommendations for state acquisition of water company lands would be triggered by the submission of currently required water company supply plans, rather than the forecasts of proposed land sales. **Effective Date: October 1, 1985.**

P.A. 85-143: AN ACT CONCERNING LAND USED AS A SOLID WASTE DISPOSAL AREA AND MUNICIPAL CONTRACTS FOR THE PROVISION OF SOLID WASTE DISPOSAL SERVICES.

Current law allows CRRA to operate solid waste disposal facilities on property it owned on May 11, 1984, without regard for local zoning requirements, provided a portion of the site had already been used for solid waste disposal. This Public Act restates that such CRRA properties are not subject to regulation by any local zoning body except that it must pay the host community one dollar per ton for unprocessed solid waste disposed of at the site.

This Public Act permits a municipality to pledge its full faith and credit to honor its contract for its disposal of solid waste to its contractors. This Public Act allows these contracts to require or authorize the payment by a municipality of the obligation of another municipality failing to make such payment and to recover from the defaulting municipality the amount paid as well as expenses and costs incurred in recovering the debt. **Effective Date: May 1, 1985.**

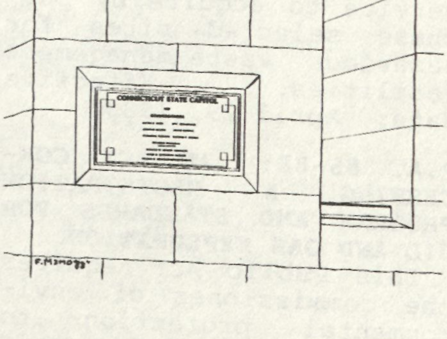
P.A. 85-162: AN ACT CONCERNING NOTICE TO WATER COMPANIES AND HEALTH DIRECTORS OF STORAGE OF HAZARDOUS SUBSTANCES ON CERTAIN WATERSHEDS.

Current law requires employers who house, store, or produce hazardous materials in their manufacturing establishments to notify the local fire marshal annually in writing of the presence of the material, its hazard class, and where in the establishment the material can normally be found. This Public Act requires that the notification include the material safety data required by regulations of the Federal Occupational Safety and Health Administration. Although current law does not require submission of the name of the product, under this Public Act the name would be required when included on the material safety data sheet.

The Public Act requires local fire marshalls to disclose this information upon written request to any water company with well fields or reservoirs on the watershed where the establishment is located and to the local health director. Current law requires distribution of the information only to firefighters. As under existing law, any party having the information would be prohibited from disclosure. **Effective Date: October 1, 1985.**

P.A. 85-177: AN ACT PROVIDING FUNDS FOR THE CONNECTICUT HAZARDOUS WASTE MANAGEMENT SERVICE.

This Public Act authorizes the Connecticut Hazardous Waste Management Service to spend up to $80,000 from the emergency spill response fund in fiscal year 1985-86 to fulfill its statutory responsibilities. **Effective Date: July 1, 1985.**



P.A. 85-218: AN ACT REQUIRING COVERS ON REFUSE COLLECTION CONTAINERS.

This Public Act requires covers on refuse collection containers that are attached to refuse collection vehicles having a gross weight of 5000 pounds or more. This Public Act requires the containers to be covered by a screen or other material having perforations of a size not greater than two square inches. This requirement is intended to improve highway safety and reduce litter by preventing trash from falling out of open containers while refuse collection vehicles are being operated. **Effective Date: October 1, 1985.**

P.A. 85-225: AN ACT CONCERNING EMERGENCY REPAIRS AT STATE FACILITIES.

This Public Act increases the amount of money that can be used for emergency repairs at state facilities. This Public Act increases the amount from $50,000 to $100,000. Prior law enabled the commissioner of administrative services or the joint committee on legislative management when declaring that an emergency condition exists in any facility damaged by fire or other disaster that is under their respective control were permitted to expend up to $50,000 for emergency repairs without using competitive bidding. **Effective Date: October 1, 1985.**

P.A. 85-243: AN ACT CONCERNING THE CONNECTICUT WATER DIVERSION POLICY ACT.

In the case of water diversions between subregional drainage basins within the same regional drainage basin, this Public Act allows the commissioner of environmental protection to waive a diversion permit public hearing after one newspaper notice and notice by mail to certain state and local officials. A hearing would be required if the commissioner receives a petition signed by at least 25 persons within 30 days of mailing or publication of the waiver notice.

The Public Act exempts from the diversion law those diversions directly related to routine maintenance and emergency repairs of dams.

Finally, the Public Act defines "regional drainage basins" by reference to a map compiled by the Connecticut Geological and Natural History Survey. The term "subregional drainage basin" is already defined in law by reference to the same map. **Effective Date: October 1, 1985.**

P.A. 85-259: AN ACT CONCERNING SATELLITE MANAGEMENT OF WATER COMPANIES AND EXPEDITED RATE PROCEEDINGS ON A LIMITED BASIS.

The Public Act allows one water company to provide services to another water company (satellite management) including services dealing with operation, maintenance, administration, emergency and scheduled repairs, monitoring and reporting, billing, operator training, and purchase of supplies and equipment. **Effective Date: October 1, 1985.**

P.A. 85-260: AN ACT CONCERNING THE BOND LIMIT OF THE CONNECTICUT RESOURCES RECOVERY AUTHORITY.

This Public Act increases the bond limit of the Connecticut Resources Recovery Authority from $400 million to $650 million. **Effective Date: July 1, 1985.**

P.A. 85-261: AN ACT CONCERNING DISPOSAL OF CERTAIN WASTE BY THE CONNECTICUT RESOURCES RECOVERY AUTHORITY.

The Public Act requires the Connecticut Resources Recovery Authority (CRRA) to accept, at the landfills it owns, residues from a municipal or private resource recovery plant that has been approved by the commissioner of environmental protection. The landfill must be certified by a CRRA engineer as having capacity in excess of that committed pursuant to a CRRA project for which bonds have been issued. CRRA would be required to charge a fee covering the actual cost of residue disposal.

The Public Act also specifies that CRRA's enabling law would not limit municipalities from contracting with CRRA for municipal administration of a waste management project. **Effective Date: October 1, 1985.**

P.A. 85-263: AN ACT CONCERNING THE DISPOSITION OF SEIZED PROPERTY.

This act makes various technical changes in the legal requirements governing the procedures for handling and disposition of seized property and authorizes the auction of seized firearms by the state. **Effective Date: October 1, 1985.**

P.A. 85-266: AN ACT CONCERNING FARM WASTE MANAGEMENT COSTS.

This Public Act enables the commissioner of agriculture to reimburse any farmer for part of the cost of the completion of a component of a farm waste management system. The total federal and state grants available to a farmer cannot exceed 75 percent of such costs. **Effective Date: July 1, 1985.**

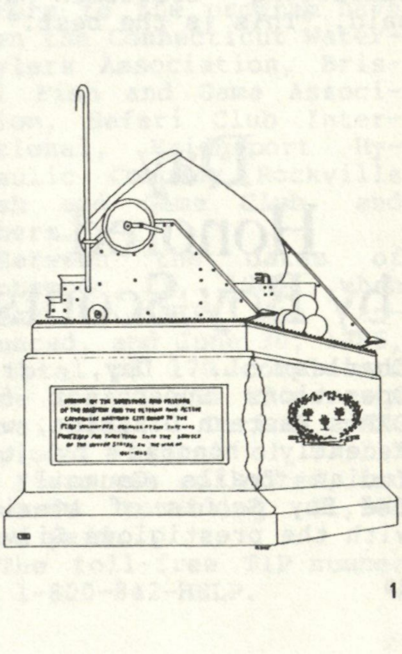
P.A. 85-297: AN ACT CONCERNING THE DEVELOPMENT OF A PLAN FOR THE USE OF WASTE MATERIALS IN CONSTRUCTION PROJECTS, THE COLLECTION AND TRANSPORTATION OF SOLID WASTE, AND CONTRACTS FOR ELECTRICITY GENERATED BY RESOURCES RECOVERY FACILITIES.

This Public Act requires DAS to research and plan for possible productive use of residue. DAS and the Connecticut Academy of Science and Engineering must submit a plan to the general assembly by February 5, 1986.

This Public Act also codifies into statute a partial reversal of a declaratory ruling by the DPUC, docket 84-03-07, March 26, 1985, which ruled that intrastate motor carriers of waste with no resale value must obtain a certificate of public convenience and necessity from DPUC. The case ruled on involved transport of hazardous waste, but no distinction was made relative to non-hazardous solid waste and it was included by implication. This section of 85-297 clarifies that such a certificate is not needed for intrastate transport of non-hazardous solid waste as defined in CGS 22a-207.

This Public Act also amended CGS 16-243e requiring electric companies purchasing electricity generated by a resource recovery facility to enter into a 20-year contract. This new language does not make a substantive change from the prior law which stated "shall compensate for 20 years." **Effective Date: June 5, 1985.** ■

A continuation of the legislation from the 1985 General Assembly will appear in next month's ***Citizens' Bulletin.***



The Bulletin Board

Ledyard Crafts Festival

The Ledyard Historical Society is sponsoring the Seventh Annual Colonial Crafts Festival at the historic Nathan Lester House on Sunday, September 22, 1985, from 11 a.m. to 5 p.m., rain or shine.

Over 40 artisans will demonstrate their skills at this unique event.

Refreshments will be sold on the lawn. There will be a special "Colonial Pantry" booth with delicious, home-prepared edibles, many from recipes of "yesteryear," and craft items. There will be a raffle of a turkey cooked in the fireplace and the craftsmen have donated several attractive items to also be raffled off. The Second Connecticut Regiment will demonstrate camping life.

The donation for adults is $3.00; 8-18 years old and senior citizens, $2.00; and children under eight are free.

For further information, contact Jim Bowersett (464-8888), or Barbara Williams (536-8797). Past exhibiting craftsmen have said, "This is the best." ■

Day Honored by Boy Scouts

Charles L. Day, Jr., Operations Supervisor for DEP's Eastern District, was recently honored by the Indian Trails Council of the Boy Scouts of America with the prestigious Silver Beaver Award. This annual award is the highest honor given to adult leaders by the Council.

The honor, which Day describes as "humbling," is in recognition of outstanding service to youth, community activities, and scouting. As a young man, Day was an Eagle Scout and his troop's first member of the Order-of-the-Arrow, a camping honor society. In college, he became a member of the scouting fraternity, Alpha Phi Omega.

Scouting has involved Day's entire family, from his parents through his wife and four children, and his three sons are all Eagle Scouts. Day's wife, Dorothy, has been a supporter, though she was most active when their children were young. "Not too many mothers have three Eagles, so I know she's pleased about that."

Day feels the Boy Scouts has been outstanding in the promotion of moral values for young people. "I find this a well-rounded organization for enhancing the life experience of our young people," said Day. The social aspect, bringing the family together, has also been important to him.

Charles Day's community involvement includes many years of service to the Junior Grange, Masonic Order, and his church. He is modest about the commitment of energy that all this service require, saying, "I think we all like to leave this place a bit better than we found it." ■

Upcoming Events at Goodwin Forest

September 14, Saturday, 1 pm -- Tree Identification, Hardwoods

September 21, Saturday, 1 pm -- Tree Identification, Softwoods

Two sessions to learn about trees native to Connecticut, and a few commonly planted. Participants will be divided into beginner and intermediate levels. Tree book available at cost if ordered in advance by calling Lois Kelley at 455-9534.

September 29, Sunday, 1 pm -- Mushrooms & Other Non-flowering Plants

This is our annual fungus foray with Dr. Barry Wulff, Professor of Biology at Eastern Connecticut State University. Co-sponsored by the Sierra Club.

October 6, Sunday, 1 pm -- Hawks, Eagles, Vultures, and Owls

Learn more about these protected predatory birds in time to enjoy their migratory flights. A program by the DEP Bureau of Wildlife.

October 27, Sunday, 1 pm -- The Canada Goose: Nuisance or Nostalgia?

Paul Merola, Waterfowl Biologist, will help us, indoors and out, to understand these beautiful bir better. Bring your binoculars. Co-sponsored by the Sierra Club.

You may receive the winter program schdule as soon as it is ready by sending a self-addressed, stamped, business-size envelope to Lois Kelley at the Conservation Center, Rt. 1, Box 100, N. Windham, CT 06256

The James L. Goodwin State Forest Conservation Center, one of the state's earliest tree farms, was given to the people of Connecticut as an educational resource. Programs are offered on a variety of conservation-related subjects of general family interest as well as on specific resource-management techniques and practices. ■

Hazardous Waste Workshops and Hearings

The Connecticut Hazardous Waste Management Service has set dates for a series of workshops and public hearings to be held in September, 1985, for the purpose of presenting a draft hazardous waste management plan to the public.

Workshops on the draft plan will be held on:

September 5, 1985, 9:00 a.m. - 12:00 noon, Ramada Inn, North Haven
September 10, 1985, 7:00 - 10:00 p.m., State Capitol, Rooms W56-W58, Hartford

Public hearings to receive comments on the draft plan will be held on:

September 17, 1985, 7:00 - 10:00 p.m., City Hall Aldermanic Chambers East, Waterbury
September 19, 1985, 3:00 - 5:00 p.m. and 7:00 - 10:00 p.m., City Hall, Common Council Room, Bridgeport
September 23, 1985, 7:00 - 10:00 p.m., Norwich Sheraton, Norwich
September 26, 1985, 3:00 - 5:00 p.m. and 7:00 10:00 p.m., State Capitol, Rooms W56-W58, Hartford

Written comments on the draft plan will be accepted through October 28, 1985. For further information, call 244-2007. ■

Wildlife Violators Sentenced

Three Connecticut men have lost their hunting privileges, been fined and given prison sentences for illegal commercialization of wildlife. Their conviction and sentencing followed a two-year undercover investigation conducted by special agents of the U.S. Fish and Wildlife Service and state wildlife law enforcement officers.

U.S. District Court Judge T. Emmett Clarie sentenced Arlie F. Greene, 55, of Prospect, Conn., and his brother, Gale V. Greene, 45, of Prospect, Conn., and Shaftsbury, Vt., to three years in prison (of which all but 90 days was suspended) and three years probation. He also fined them $1,000 each. Their brother, Lowell, W. Greene, 53, of Watertown, Conn., received a one-year suspended sentence, three years probation, and was fined $500. All three have lost the right to hunt or to purchase firearms for at least three years. At an earlier proceeding, Gary E. Greene, 34, of Bennington, Vt., a nephew of the three men, received a two-year prison sentence (of which all but 90 days was suspended).

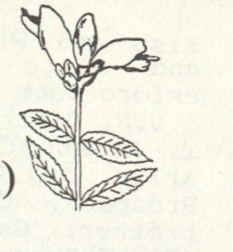
Conservation Officer Robert Aborn, on behalf of DEP's Bureau of Law Enforcement and the Connecticut Wildlife Federation, would like to thank the many individuals and corporations who have extended their support to Operation TIP (Turn In Poachers). Major contributors to the program have been the Connecticut Waterfowlers Association, Bristol Fish and Game Association, Safari Club International, Bridgeport Hydraulic Company, Rockville Fish and Game Club, and others.

Between the dates of September 21, 1984, when Operation TIP was announced, and June 30, 1985, a total of 170 complaints were logged and 49 arrests were made. During that period, a total of $3,117 in fines was collected, and rewards totalling $1,900 were paid.

The toll-free TIP number is 1-800-842-HELP. ■

Trailside Botanizer

Turtlehead (Chelone glabra)



By G. Winston Carter
Illustration by Pam Carter

Turtlehead, or balmony as it is sometimes called, is a plant of wetland areas. It is often found growing in the water along streams, in ditches, swamps, and wet woods. Turtleheads can grow to a height of seven feet, but are usually from one to three feet tall. They are perennials with a stem that is slightly four-sided.

© 1985 by G. Winston Carter.

The leaves vary in appearance from lance-like to egg-shaped. They are attached to the stem by small stalks or may be stalkless. The flower is tube-like with a two-lipped opening. Its notched upper lip is arched over the three-lobed, hairy underlip. The throat of the corolla appears woolly and the four stamens are also woolly. There is a fifth shorter, smooth, green stamen which lacks pollen and is therefore sterile. The flower of the turtlehead has only one pistil.

The blossoms are arranged in spikes in both axillary and terminal clusters. They bloom from July to October. The color of the flower is usually white, but may be slightly reddish or purple. The fruit is an egg-shaped capsule.

The origin of the name turtlehead is quite obvious. Both its genus name and common name are derived from the resemblance of the flower to the head of a turtle or snake. Chelone is a Greek name for "tortoise."

Pink turtlehead (Chelone lyoni) is another species of the eight kinds of turtlehead in North America. It, like many of the others, is used as a cultivated plant for borders, but it sometimes escapes to the wild. This species blossoms about a week earlier than Chelone glabra.

Turtleheads have had a long history of medicinal use. They were at one time thought to be useful for treating upset stomach, liver and gall bladder ailments, skin eruptions, and as a tonic. ■

The Night Sky

Here It Comes Again

By Francis Downey,
Gengras Planetarium

The comings and goings of Halley's comet have fascinated mankind for over 2000 years. Throughout most of this time, the comet was believed to portend death and destruction. In 66 A.D., the appearance of the comet coincided with the fall of Jerusalem. When the comet appeared in the year 451, Attila the Hun was invading the western provinces of the Roman Empire and all of Europe was trembling with fear. The most famous approach occurred in 1066, as William the Conqueror was preparing to invade England. William believed the comet presaged his victory over the English. In October of that year William was victorious at the Battle of Hastings.

This fear of Halley's comet has continued into the 20th century. In 1910, astronomers predicted that the Earth would pass through the comet's tail on May 18th. Fearing the effects from comet dust, people boarded their houses, bought gas masks, and consumed comet pills. However, the Earth safely passed through the tail on the next day. Once again, the world managed to survive Comet Halley.

Now it is our turn. Halley's comet has returned for a new generation to watch and appreciate. This time most of the comet paranoia has disappeared. It has been replaced, however, with comet marketing. There are comet books, patches, bumper stickers, ties, coffee cups, and T-shirts. There are also trips to exotic lands with famous astronomers to view Halley's comet. The question this time around is whether we will survive the comet hype, not the comet.

Here in Connecticut the comet will probably be fairly faint and low in the sky. But if you have a pair of binoculars and if the night skies are dark, you should be able to see the comet as early as Thanksgiving. If you look near Taurus the Bull, you should find Comet Halley.

The best time to look for the comet will be in late March and early April. The comet will have a long tail and will be fairly high above the horizon. Unfortunately, in the spring, the comet is an early riser. It will be visible above the eastern horiz during the pre-dawn hours. You may want to take a look, though. Halley's comet will not be back for another 76 years. ■

Letters To The Editor

This year, a gift subscription to the DEP's Citizens' Bulletin has enabled me to appreciate my home state of Connecticut in a more profound manner than ever before.

I am continually impressed with the diversity of the articles in the publication. One of my favorite issues is that of this past May with its emphasis on camping. I really had no idea of how many campgrounds existed in this beautiful little state of ours. You have provided me with a wonderful idea of how to further acquaint both me and my children with Connecticut on my next trip home.

Adrienne Wienir
Encino, California

Our June article on mink mentioned that the animals are vocal. In particular, minks may hiss or screech when trapped.

Most pelts that are used commercially come from minks raised on ranches. These animals are killed by electrocution, gassing, cyanide, decompression, chloroform, or injection. Before they are killed, the animals are kept in very small wire-bottomed cages which frustrate the minks' natural instincts of movement.

The glamour of each mink coat is lined with suffering. Friends of Animals believes that fur is only beautiful when it is worn by its live, original owner.

Priscilla Feral
Friends of Animals, Inc.

"The Connecticut Department of Environmental Protection in an equal opportunity agency that provides services, facilities, and employment opportunities without regard to race, color, religion, age, sex, physical or mental disability, national origin, ancestry, marital status, or political beliefs."

For some years now, your informative Bulletin has been a source of inspiration and delight to my family and friends. The timely, eye-opening articles have heightened our awareness of the responsibility to keep Connecticut beautiful and to maintain the harmony of nature and man. Thank you and kudos for your outstanding publication.

Mrs. Lee Brancato
Danbury Garden Club

In her article, "The Natural Diversity Conference" (Citizens' Bulletin, June, 1985), Martha Kelly understated the importance of microbes to the environment. Microbes do much more than "play essential roles in the production of oxygen and aid(ing) our digestive processes." Without these "lower forms of life," higher forms of life would not be able to sustain themselves.

Non-photosynthetic microorganisms (i.e., bacteria and fungi) are the decomposers in the biosphere that are responsible for recycling those elements that become tied up in higher life forms. Without these benign activities, the earth would be knee-deep in the carcasses of higher life forms.

Paul Holmes
Hamden

I am very impressed with the Citizens' Bulletin, and with what I have learned of the Connecticut DEP through this publication. You guys sound more like an environmental group than a government agency. Three cheers! I wish you every success in your work.

Faith M. Larkin
U.S. Embassy, Caracas

The Citizens' Bulletin welcomes letters from our readers. Letters should be no more than 250 words and accompanied by name, address, and phone number for verification. Letters are subject to editing. Let us hear what you think.

Endnote

Because the superior man embodies humaneness, he is able to govern men. Because he brings about the harmonious working together of all that is beautiful, he is able to unite them through the mores. Because he furthers all beings, he is able to bring them into harmony through justice. Because he is persevering and firm, he is able to carry out all actions.

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